USSR

UDC[537.226+537.311.33]:[537+535]

YERASOVA, N. A., KAYDANOV, V. I., NOVICHKOV, A. I., and NUROVSKIY, A. E.

"Apparatus for High-Speed Measurement of Thermoelectric Parameters of Semiconductor Materials in 150-500° K Temperature Range"

Translation: The apparatus is intended for simultaneous determination of specific electrical and thermal conductivity and the coefficient of thermoelectromotive force in a wide temperature range. Changes have been made in the construction of the device, as compared with the "λ" calorimeter, which permit reduction to the minimum of the influence of parasitic heat exchange and contact thermal resistances. An evaluation of the errors shows that in the determination of the thermoelectric coefficient of the materials studied the error connected with the accuracy of the measurements, thermocouple calibration, and geometry of the samples does not exceed 4-5%.

1/1

USSR

UDC 621.317.799:537.311.3

YERASOVA, N.A., KAYDANOV, V.I., NOVICHKOV, A.I., MUROVSLIY, A.B.

"Equipment For High-Speed Measurement Of the Thermoelectric Parameters Of Semiconductor Materials In The Temperature Range 150-500° K"

Tr. Leningr. politekhn. in-t (Works Of The Leningrad Polytechnical Institute), 1971, No 325, pp 10-16 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2B77)

Translation: The equipment, in which a normal regime of the second kind is used, is intended for simultaneous determination of the thermal conductivity, the specific electrical conductance, and the coefficient of thermo-emf over a wide range of temperature. The error in determining the thermoelectric coefficient does not exceed 4--5 percent. 2 ill. 4 ref. Summary.

1/1

USSR

UDC 517.917

NUROV, T. N.

"Concerning Center Conditions"

Tr. Samarkand. un-ta (Works of Samarkand University), 1970, No. 181, pp 115-129 (from RZh-Matematika, No 4, Apr 71, Abstract No 4B205)

Translation: Conditions are given under which the coordinate origin is the center for the system

$$x' = -y + \sum_{i=2}^{\infty} X_i(x, y, z),$$

$$y' = x + \sum_{i=2}^{\infty} Y_i(x, y, z),$$

$$z' = -z + \sum_{i=2}^{\infty} Z_i(x, y, z).$$

where X_i, Y_i, Z_i are homogeneous polynomials of degree i and the infinite series converge in the neighborhood of the coordinate origin. N. Rozov.

1/1

- 17 -

Abstract: The subject of this article is diffusion-kinetic burning gas jets in which the gas is a mixture of natural gas and air. In an earlier article by the first of the authors named above in the same journal (No 4, 1971) differences were found between the experimental and computed values for the length of the burning jet. The present paper gives details of further experiments performed to resolve these differences. Analysis of gas burners showed that the development modes of the burning jets lie in the transition flow region or near it, with the degree of preliminary gas mixing varied within broad limits. The experiments were done on a nozzle with a diameter of 21.5 mm, with an initial average gas flow of 15 m/s in velocity, and with the air portion of the mixture varying discretely from 0 to 100% in steps of 10%. Results of the experimentation are given. It was found that, by varying the preliminary air-gas mixture, the structure of the burning jet and its aerodynamics can be varied.
1/1

USSR

UDC: 539.4:621.81

NURTAZIN, M. S.

"Investigating Residual Stresses in Glued Seams by the Polarization-Optical Method"

Tr. TsNII stroit. konstruktsiv (Transactions of the Central Scientific Research Institute of Building Structures) 1970, No. 12, pp 90-98 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2V1093)

Translation: On models of glued seams, the nature of the distribution of shrinkage and temperature residual stresses at the limit of the glue-glued material phase boundary is investigated. By way of a model, the gluing of overlapping steel plates with EPTs-1 glue (epoxy resin ED-5, 100 parts by weight; modifier MGF-9, 20 parts by weight; hardener, polyethylene-polyamine, 13 parts by weight) The thickness of the seam varied from one to four mm, keeping the ratio of seam thickness to length constant at 1/25. The method of obtaining the model is described. The obtained results are explained. It is shown that the nature of the re-

1/2

USSR

NURTAZIN, M.S., Tr. TsNII stroit. konstruktsiy, 1970, No 12, pp 90-98
(from RZh-Mekhanika, No 2, Feb 71, Abstract No 2V1093)

sidual stress distribution (for shrinkage and temperature) and
the magnitude of the stress show practically no change with vari-
ations in thickness. The tangential stresses τ_{xy} along the
length of the glued seam are heterogeneously distributed. The
maximum stress values arise at the edges of the seams, while the
zone of peak stress is spread no further than three thicknesses
of the seam. The maximum tangent stresses τ_{max} are distributed
more uniformly. The magnitude of the shrinkage stresses in the
glued combinations of metals, on the basis of EPTs-1 glue, is
small, about 8 kg/cm^2. The fundamental part of the residual
stresses relate to the temperature; they amount to 130 kg/cm^2.
V. P. Netrebko

2/2

UDC: 547.241

USSR

NURTDINOV, S. Kh., KHAYRULLIN, R. S., TSIVUNIN, V. S., ZYKOVA, T. V., NURTDINOV, G. Kh., KAMAY, G. Kh. (deceased), Kazan' Institute of Chemical Technology imeni S. M. Kirov

"On the Interaction of Chlorides of Trivalent Phosphorus With Saturated Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2377-2382

Abstract: The authors studied reactions of phosphorus trichloride, ethyldichlorophosphine and phenyldichlorophosphine with acetone, methylethylketone, acetophenone and methylbutylketone. It was found that all of these components react smoothly with heating to 90-170°C for 16-20 hours. The reaction products in most instances were purified by vacuum distillation, resulting in colorless liquids with a slight characteristic odor. In the case of acetophenone, the products were isolated by recrystallization from alcohols. Infrared and paramagnetic resonance spectroscopic studies were used to determine the reaction mechanism for chlorides of trivalent phosphorus with ketones. Some of the properties of the resultant cyclic oxaphospholenes are tabulated.

1/1
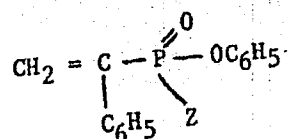
- 31 -

UDC 547.341.26.118.07

USSR

NURTDINOV, S. Kh., TSIVUNIN, V. S., NURTDINOV, G. Kh., and KAMAY, G. Kh.,
Kazan' Institute of Chemical Technology

"A Method of Making Derivatives of α-Phenylvinylphosphonic Acid"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 1, Jan 71, Author's Certificate No 289094, division C, filed 10 Nov 69,
published 8 Dec 70, p 77

Translation: This Author's Certificate introduces: 1. A method of making
derivatives of α-phenylvinylphosphonic acid of the general formula

$$CH_2 = C - \overset{\displaystyle O}{\underset{\underset{\displaystyle Z}{\displaystyle C_6H_5}}{P}} - OC_6H_5$$

where Z is Cl or C_6H_5O. As a distinguishing feature of the patent, phenyl-
dichlorophosphite or diphenylchlorophosphite is interacted with acetophenone
in the presence of heat in a closed system with subsequent isolation of the
goal product by conventional methods. 2. A modification of this method

1/2

USSR

NURTDINOV, S. Kh., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289094, division C, filed 10 Nov 69, published 8 Dec 70, p 77

distinguished by the fact that heating is done to 150-170°C.

2/2

- 37 -

USSR   UDC 547.241

NURTDINOV, S. Kh., ISMAGILOVA, N. M., MAMINA, A. I., ZYKOVA, T. V., and
TSIVUNIN, V. S., Kazan' Chemical Technological Institute imeni S. M. Kirov

"Reaction of Trivalent Phosphorus Acid Chlorides With Esters of Pyruvic
Acid"

Abstract: The reactions of trivalent phosphorus acid chlorides with pyruvic
acid esters have been investigated; the reaction products are alkyl(aryl)-
(1-chloro-1-carbalkoxy)ethylphosphinous acid chlorides. When diethylchloro-
phosphine is reacted with ethylpyruvate, an oxide of diethyl(1-carboethoxy-
ethyl)phosphine and diethylphosphinous acid chlorides are formed.

1/1

NURTDINOV, S. KH., ISMAGILOVA, N. M., NAZAROV, V. S., ZYKOVA, T. V.,
SALAKHUTDINOV, R. A., SULTANOVA, R. B., and TSIVUNIN, V. S., Kazan' Chemical-
Technological Institute Imeni S. M. Kirov

"Reaction of Aryl- and Diarylchlorophosphites With Cyclic Ketones"

Abstract: Phenyl- and diphenylchlorophosphites react with equimolar quantities
of cyclohexanone and cyclopentanone upon heating to 130-150° for 17-20 hrs
in a closed system, yielding the respective esters of cyclohexen-1-yl(cyclo-
penten-1-yl)phosphonic acids. The diphenyl ester of cyclohexen-1-ylphosphonic
acid (I) reacts with phosphorus pentasulfide converting to the thiophosphonic
acid derivative. Bromine adds across the double bond of (I) producing a di-
bromide which can be dehydrobrominated to diphenyl ester of 2,6-cyclohexadiene-
1-ylphosphonic acid.

1/1

USSR   UDC 547.476.053

NURTDINOV, S. Kh., ISMAGILOVA, N. M., ZYKOVA, T. V., SALAKHUDINOV, R. A.,
TSIVUNIN, V. S., and KAMAY, G. Kh., Kazan' Chemico-Technological Institute
imeni S. M. Kirov

"Reaction of Alkyldichlorophosphines With Chlorides of Carboxylic Acids"

Abstract: The reactions of phosphines and other phosphorus derivatives with
various acids and acid derivatives have been studied, but no information on
alkyldichlorophosphines has thus far been published. The authors studied six
members of this group in reactions with acyl chlorides of carboxylic acids.
Products in the case of acetyl and benzoyl chlorides, following treatment
with the adducts with alcohols, consisted of the esters of the alkylketo-
phosphinic acids; in the case of di- and trichloracetyl chlorides, they
consisted of vinyl esters of pentavalent phosphorus acids. Procedural
details of tests and physical constants of end-products are given.
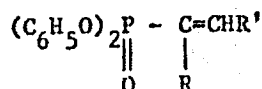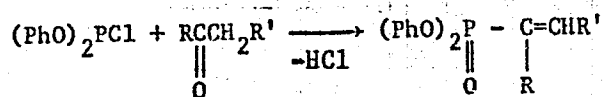
1/1

USSR   UDC 547.26'118

NURTDINOV, S. KH., KHAYRULLIN, R. S., TSIVUNIN, V. S., ZYKOVA, T. V., KAMAY, G. KH.

"Interaction of Diarylchlorophosphites with Saturated Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 123-125

Abstract: It was demonstrated earlier [S. Kh. Nurtidinov, et al., USSR Author's Certificate No 249386, Byull. Izobr., No 25, 1969; ZhOKh, No 40, 36, 1970; ZhOKh, No 40, 2377, 1970] that halogenophosphines react comparatively smoothly with saturated ketones with the formation of cyclic oxaphospholenes. As a continuation of this research, a study was made of the reaction of diphenyl-chlorophosphite with acetone, methylethyl, methylpropyl, methylbutylketone and acetophenone. The indicated components react with heating to 100-160° for 10-20 hours with the formation of the vinyl derivatives of pentavalent phosphorus:

$$(PhO)_2PCl + RCCH_2R' \xrightarrow{-HCl} (PhO)_2P - C=CHR'$$

with O below the $\|$ on the left, and O and R below on the right.

$$(C_6H_5O)_2P - C=CHR'$$
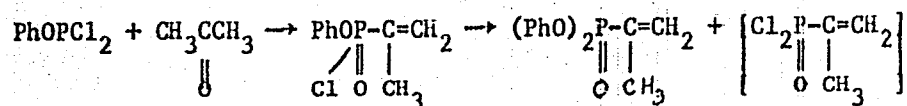
with O and R below.

1/2

USSR

NURTDINOV, S. KH., et al., Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 123-125

The primary aryldichlorophosphites react with saturated ketones as follows:

$$PhOPCl_2 + CH_3CCH_3 \longrightarrow PhOP-C=CH_2 \longrightarrow (PhO)_2P-C=CH_2 + \left[Cl_2P-C=CH_2 \right]$$

Infrared spectra are presented confirming the structure of the diphenyl esters of butene-g-ylphosphonic-1 acid and x-phenylvinylphosphonic acid. The paramagnetic resonance spectrum is presented for the diphenyl ester of propenylphosphonous-2 acid.

2/2

USSR

UDC 547.241.284

NURTDINOV, S. KH., KHAYRULLIN, R. S., ZYKOVA, T. V., TSIVUNIN,
V. S., KAMAY, G. KH. (deceased), Kazan' Institute of Chemical
Technology imeni S. M. Kirov

"Reaction of Diethylchlorophosphine With Ketones"

Abstract: Continuing their studies of chlorophosphine reactions
with saturated ketones, the authors synthesized a series of
tertiary phosphine oxides by heating (at 100-110°) chlorodiethyl-
phosphine with aliphatic ketones or acetophenone. The chemical
structure of the products was confirmed by their IR and NMR spectra
and conversion to some other compounds. α-Chloroisopropyl-
diethylphosphine oxide when treated with alcoholic alkali or
acetic anhydride yielded diethylisopropenylphosphine oxide or
α-acetoxyisopropyldiethylphosphine oxide. Diethyl-α-phenylvinyl-
phosphine oxide with alcoholic alkali gave sodium dialkylphosphinate.
The elemental analysis data and physical constants of the syn-
thesized compounds are given.

1/1

- 57 -

USSR

UDC 547.241

NURTDINOV, S. KH., KHAYRULLIN, R. S., BURMAKINA, T. V., ZYKOVA, T. V., SALAKHUTDINOV, R. A., TSIVUNIN, V. S., and KAMAY, G. KH. (DECEASED), Kazan' Institute of Chemical Technology

"Reaction of Aryldichlorophosphines with Ketones"

Abstract: Continuing their study of the condensation of primary chlorophosphines with ketones, the authors investigated the reaction of phenyl- and tolyldichlorophosphine with saturated ketones. It was found that these components react on heating for 10-20 hours at 90-130° to give cyclic oxaphospholenes, which react with alcohols to give corresponding esters of aryl-γ-ketophosphinic acids. IR, NMR, and PMR spectroscopy methods were used to study the mechanism of the interaction of aryldichlorophosphines with ketones. The results confirm that at one of the stages of the reaction γ-ketophosphinic acid chlorides are formed.

1/1

NURTDINOV, S. Kh., KHAYRULLIN, R. S., TSIVUNIN, V. S., ZYKOVA, T. V., NURTDINOV,
G. Kh., KAMAY, G. Kh. (deceased), Kazan' Institute of Chemical Technology imeni
S. M. Kirov

"On the Interaction of Chlorides of Trivalent Phosphorus With Saturated Ketones"

Abstract: The authors studied reactions of phosphorus trichloride, ethyldichlo-
rophosphine and phenyldichlorophosphine with acetone, methylethylketone, aceto-
phenone and methylbutylketone. It was found that all of these components react
smoothly with heating to 90-170°C for 16-20 hours. The reaction products in
most instances were purified by vacuum distillation, resulting in colorless
liquids with a slight characteristic odor. In the case of acetophenone, the
products were isolated by recrystallization from alcohols. Infrared and para-
magnetic resonance spectroscopic studies were used to determine the reaction
mechanism for chlorides of trivalent phosphorus with ketones. Some of the
properties of the resultant cyclic oxaphospholenes are tabulated.

1/1

- 31 -

UDC: 547.241

USSR

NURTDINOV, S. Kh., TSIVUNIN, V. S., KHAYRULLIN, R. S., KASHTANOVA, V. G., and KAMAI, G. Kh., Kazan' Institute of Chemical Technology

"Reaction of Ethyl- and Phenyldichlorophosphine with Acetone"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 1, Jan 70, pp 36-40

Abstract: Liquid heterocyclic compounds, 2-keto-2-ethyl-(or phenyl-)-3,3,5--trimethyl-1-oxa-2,4-phospholenes (I), were obtained in 67-70% yields by heating for 10-20 hours in a sealed tube mixtures of ethyl- or phenyldichlorophosphine with acetone at 75-80° or 100°, respectively. Physical constants of I are given. The structure of I was determined from IR and NMR spectra. Heating I with methanol at 70-150° in a sealed tube gave ethyl- or phenyl 1,1-dimethyl-3-ketobutylphosphinites (II) in 49-73% yields. All II compounds but one are liquids. Similarly heating I at 110° with water slightly acidified with hydrochloric acid gave 52-54% yields of ethyl- or phenyl-1,1--dimethyl-3-ketobutylphosphinic acids, crystalline solids with melting point 112-13° and 121°, respectively. The structures of the phenylketobutylphosphinic acid, I and II were determined from IR spectra.
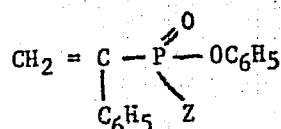
1/1

UDC 547.341.26.118.07

USSR

NURTDINOV, S. Kh., TSIVUNIN, V. S., NURTDINOV, G. Kh., and KAMAY, G. Kh.,
Kazan Institute of Chemical Technology

"A Method of Making Derivatives of α-Phenylvinylphosphonic Acid"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 1, Jan 71, Author's Certificate No 289094, division C, filed 10 Nov 69,
published 8 Dec 70, p 77

Translation: This Author's Certificate introduces: 1. A method of making
derivatives of α-phenylvinylphosphonic acid of the general formula

$$CH_2 = C - \overset{\displaystyle \overset{O}{\parallel}}{P} - OC_6H_5$$
$$\underset{C_6H_5}{|} \quad \underset{Z}{\diagdown}$$

where Z is Cl or C_6H_5O. As a distinguishing feature of the patent, phenyl-
dichlorophosphite or diphenylchlorophosphite is interacted with acetophenone
in the presence of heat in a closed system with subsequent isolation of the
goal product by conventional methods. 2. A modification of this method
1/2

USSR

NURTDINOV, S. Kh., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, Jan 71, Author's Certificate No 289094, division C, filed 10 Nov 69, published 8 Dec 70, p 77

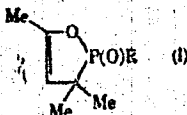distinguished by the fact that heating is done to 150-170°C.

2/2

111569y Reaction of ethyl- and phenyldichlorophosphine with acetone. Nurtdinov, S. Kh.; Tsivunin, Y. S.; Khairullin, R. S.; Kashkanova, V. G.; Kamai, G. (Kazan. Khim.-Tekhnol. Inst., Kazan, USSR). Zh. Obshch. Khim. 1970, 40(1), 36-40

(Russ). Heating in a sealed tube 22 g $EtPCl_2$ and 19.2 g Me_2CO 10 hr at 75-80° gave 67% I (R = Et) $b_{0.1}$ 80-2°, d^{20} 1.0630, n_D^{20} 1.4768. $PhPCl_2$ similarly gave in 20 hr at 100° 70% I (R = Ph), $b_{0.09}$ 136°, 1.0310, 1.5415. Heating I with R^1OH in a sealed tube at 100-50° several hr gave $RP(OR^1)CMe_2CH_2Ac$ (R and R^1 shown): Et, Me, 73%, b_1 112-13°, 1.0670, 1.4645; Ph, Me, 50%, $b_{0.1}$ 149-52°, 1.1260, 1.5255; Et, Et, 63%, b_1 128-30°, 1.0400, 1.4610; Et, Pr, 57%, b_1 131-3°, 1.0300, 1.4040; Et, iso-Pr, 52%, m. 82-4°; Et, Bu, 49%, $b_{0.03}$ 96-8°, 1.0250, 1.4631; Et, C_5H_{11}, 51%, $b_{0.03}$ 122-4°, 0.9837, 1.4502; Ph, Et, 67%, $b_{0.1}$ 154-6°, 1.1250, 1.5235 (2,4-dinitrophenylhydrazone

REEL/FRAME
19830371

7

AP0053349

m. 213°); Ph, Pr, 70.8%, b$_{0.2}$ 141-3°, 1.0870, 1.5137 (2,4-dinitrophenylhydrazone m. 203°); Ph, iso-Pr, 56.9%, b$_{4.1}$ 131-3°, 1.0968, 1.5150; Ph, Bu, 67.5%, b$_{9.15}$ 146-8°, 1.0697, 1.5110; Ph, iso-Bu, 52.3%, b$_{9.15}$ 158-60°, 1.0741, 1.5115; Ph, C$_5$H$_{11}$, 69%, b$_{0.4}$ 166-70°, 1.0613, 1.5068; Ph, iso-C$_5$H$_{11}$, 71%, b$_{0.08}$ 138-40°, 1.0630, 1.5075. Heating I with H$_2$O slightly acidified with HCl 8 hr at 110° gave 52-4% AeCH$_2$CMe$_2$P(O)(OH)R: Et, m. 112-13°; Ph, m. 121° (aniline salt, m. 124°).

G. M. Kosolapoff

19830372

UNCLASSIFIED   PROCESSING DATE--27NOV70

1/2   008
TITLE--USE OF A VARIATION PRINCIPLE FOR CALCULATING THERMODYNAMIC
FUNCTIONS OF THE INTRAMOLECULAR ROTATION OF SYMMETRIC TOPS -U-

AUTHOR-(03)-MOSIN, A.M., NURULAYEV, N.G., MIKHAYLOV, A.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1359

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMODYNAMIC FUNCTION, VECTOR ANALYSIS, MOLECULAR PHYSICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0875   STEP NO--UR/0076/70/044/005/1359/1359

CIRC ACCESSION NO--AP0136309
                         UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136309
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MATRIX ELEMENTS OF THE ENERGY
OPERATOR CAN BE OBTAINED BY RESOLN. INTO A FINITE FOURIER SERIES. THE
CHARACTER OF THE FUNCTION SYMMETRY CAN BE OBTAINED BY THE ANAL. OF
PROPER VECTORS OF THE OPERATOR WHICH ENABLE THE DETN. OF THE
CORRESPONDING ENERGY LEVELS AND THE CALCN. OF THE THERMODYNAMIC
FUNCTIONS.

UNCLASSIFIED

(12)

USSR   UDC 539.1.074.3

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVSHCHIKOV, A. A.,
DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHANIN, A. P.,
MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV,
Ye. V., SISKIN, V. V., SOLOV'YEV, L. F., and SOLOV'YANOV, V. L., Institute
of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of
High-Energy Particles"

Abstract: A description is given of a hodoscopic installation, developed at
the Institute of High-Energy Physics, for investigation of the elastic scat-
tering of high-energy particles within the pulse range of 30-60 gigaelectron
volts/sec. The range of dispersion angles covered by the installation is
0-29 millirads with an angular resolution of ± 0.17 millirad. The total
solid angle is 39 microsteres. The pulse is determined to within $\pm 0.22\%$.
The resolving time is 35 nanosec. The dead time is 50 microsec. The pulse
pass band of the spectrometer is 8%. The statistics-setup is up to 10^6 per
hour. The installation is electrically coupled to a "Minsk-22" computer,
which stores and processes the information during the experiment. The

1/2

(12)

USSR

BORISOV, A. A., et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of π^--mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

2/2

USSR

NUS, G. S.

"Intensification of Electric Melting and Calculations of the Thermal Ore Slag Electric Furnaces"

Sb. nauch. tr. Nii tsvet. met. (Collected Scientific Works of the Scientific Research Institute of Nonferrous Metallurgy), 1971, No 3, pp 106-113 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G312)

Translation: A model of the operating process of slag electric melting of Ni charge is proposed. Data are presented on the mathematical description and physical simulation of the process. The proposed procedure for calculating the thermal or slag electric furnaces with intensification of electric melting is given. Two tables and a 2-entry bibliography.

1/1

USSR   UDC 576.851.49 (Bact. typhi).083.35:663.14:636.087.24

KASHANOVA, N. I., NUSINOV, A. E., BENDAS, L. G., and ZHARIKHINA, M. A., Moscow
Municipal Sanitary-Epidemiological Station and Moscow Pilot Plant for Enzyme
Preparations

"Use of a Fungus Hydrolysate from Nutrient Yeasts as the Base of a Nutrient
Medium for Phage Typing of Salmonella typhi"

Abstract: A nutrient medium derived from yeast hydrolysate is a quick and
inexpensive way of phage typing the agent of typhoid fever. The medium con-
sists of the hydrolysate diluted with water (1:5), sodium chloride, and agar.
Two drops of Vi-I phage are added to a test tube with the hydrolysate after
it is inoculated with S. typhi at the rate of 50 million cells in 1 ml of
medium. Complete lysis occurs within 5 hours. The suitability of the yeast
hydrolysate for typing S. typhi was successfully tested on 100 cultures iso-
lated from bacteria carriers and typhoid patients.

1/1

UDC 518:517.392

USSR

NUTFULLIN, Sh. N.

"Quadrature and Cubature Formulas for Improper Integrals Containing Parameters"

Uch. zap. Kemerov. gos. ped. in-t (Scientific Notes of the Kemerovo State Pedagogical Institute), No 23, 1970, pp 49-58 (from Referativnyy Zhurnal -- Matematika, No 7, July 71, Abstract No 9B974, by I. Shelikhova)

Translation: Quadrature and cubature formulas with algebraic degree of accuracy $\leqslant 2m - 1$ are derived for computing convergent improper integrals containing parameters

$$I_1(\alpha) = \int_{-\infty}^{\infty} e^{-x^2} |x|^{2\alpha} f(x)\, dx \quad \left(\alpha > -\frac{1}{2}\right)$$

and

$$I_2(\beta) = \int_{-\infty}^{\infty}\int_{-\infty}^{\infty} e^{-(x^2+\beta xy+y^2)} \varphi(x,y)\, dx\, dy \quad (-2 < \beta < 2).$$

1/2   — 13 —

USSR

Quadrature formulas with cusps in the roots of a Sonin polynomial and a
Pollaczek polynomial are derived, along with equiweighted quadrature
formulas containing a Sonin weighting function. Cubature formulas with
cusps in roots of Hermite polynomials and with weights containing hyper-
bolic functions whose cusps lie on concentric circles symmetric to the
coordinate axes are obtained. Examples are presented for the formulas
derived, along with a table of cusps and coefficients of the interpola-
tional quadratures. (12 bibliographic references)

2/2

TITLE—THE EMPLOYMENT OF NEUROLEPTANALGESIA IN EMERGENCY SURGERY -U-

AUTHOR-(02)-NUTRIKHIN, N.A., VASILYEVA, YE.P.

CCUNTRY OF INFO—USSR

SOURCE—KHIRURGIYA, 1970, NR 6, PP 100-103

DATE PUBLISHED————70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS—ANESTHESIA, ANALGESTIC DRUG, SURGERY, INJURY, HEMORRHAGE, INTESTINAL OBSTRUCTUION, PERITONEUM

CCNTRCL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAME—3001/1957   STEP NO—UR/0531/70/000/006/0100/0103

CIRC ACCESSION NO—AP0127358
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127358
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS REPORT ON THE USE OF
NEUROLEPTANALGESIA IN 80 PATIENTS SUBJECTED TO EMERGENCY OPERATIONS FOR
SEVERE INJURIES, MASSIVE GASTRIC HEMORRHAGES, INTESTINAL OBSTRUCTION,
SUPPURATIVE PERITONITIS. GALOPERIDOL AND PROMEDOL IN COMBINATION WITH
NITROUS OXIDE WERE USED FOR NEUROLEPTANALGESIA. THE ABOVE MENTIONED
TECHNIQUE IN CONSIDERED AS ACCESSIBLE AND SAFE IN EMERGENCY SURGERY.
FACILITY: KLINIKA GOSPITAL'NOY KHIRURGII ARKHANGEL'SKOGO
MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1/2   010   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--TRANSAMINATION OF SOME AMINO ACIDS WITH ALPHA,KETOGLUTARATE IN
   HOMOGENATES OF GRAPEVINE ROOTS -U-
AUTHOR--NUTSUBIDZE, N.N.

COUNTRY OF INFO--USSR

SOURCE--SOOBSHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 205-8

DATE PUBLISHED-------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AGRICULTURE CROP, PLANT PHYSIOLOGY, AMINO ACID, TRANSAMINASE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1964   STEP NO--UR/0251/70/057/001/0205/0208

CIRC ACCESSION NO--AP0137143
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0137143
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GLYCINE, ALANINE, ASPARTIC ACID,
AND ORNITHINE ARE THE MOST ACTIVE DONORS OF AMINO GROUPS. GLYCINE AND
ALANINE YIELD LARGE AMTS. OF GLUTAMINE AND ASPARTIC ACID. ASPARTATE
STIMULATES THE FORMATION OF GLUTAMIC ACID, GLUTAMINE, AND ARGININE EVEN
WITHOUT THE ADDN. OF ALPHA KETOGULTARATE. GLUTAMINE WITH ALPHA
KETOGLUTARATE YIELDS SMALL AMTS. OF GLUTAMIC ACID, AND LARGE AMTS. OF
ASPARTIC ACID, ARGININE, AND HISTIDINE. OXALACETATE IS PROBABLY THE
PRINCIPAL KETO ACID IN GRAPEVINE THAT ACTIVELY BINDS EXCESS OF N.
TRANSAMINATION OF METHIONINE, TYROSINE, AND ASPARAGINE IS LESS ACTIVE
THAN THAT OF PHENYLALANINE, GLUTAMINE, AND LEUCINE.

UNCLASSIFIED

UDC 621.382.2

USSR

NUYANZIN, V.P.

"Investigation Of The Characteristics Of Semiconductor Surface Capacitance"

Tr. Uchebn. in-tov svyazi. M-vo svyazi SSSR (Works Of Educational Institutions Of Communication. Ministry Of Communication SSSR), 1970, Issue 49, pp 211-214 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3B113)

Translation: The method is described and the results are presented of an investigation of the dependences of the capacitance C and the figure of merit Q on the voltage V for surface varactors (SV) of the radiofrequency band. The dependences C(U) and Q(U) have a qualitatively similar "step-by-step" character. An abrupt change of the magnitudes C and Q takes place in the region V from -10 to 10 v. The dependence of C on the frequency is very weak. The large magnitudes of Q correspond to a regime of the SV when the capacitance of the surface layer of the semiconductor is much more than the capacitance of the dielectric layer. In this regime Q is decreased with an increase of the frequency. From the data obtained it follows that a SV can be used as nonlinear capacitances in radio engineering devices. Preliminary computations show that on the basis

1/2

USSR

NUYANZIN, V. P., Tr. Uchebn. in-tov svyazi. M-vo svyazi SSSR, 1970, Issue 49, pp 211-214

of the specimens of SV investigated it is possible to create controlled react-ive elements or systems in which amplitude modulation is produced by a change of the coupling of the generator with the load. The reactive power of such a system amounts to 7-10 volt-ampere with losses at a frequency of 20 MHz of approximately 0.18 watt. 1 ill. 8 ref. V.B.

2/2

USSR   UDC 911.3.616-02.614.77(470.311)

NUYKIN, Ya. V.

"The Effect of Soil pH on the Distribution of Leptospirosis in Moskow Oblast Animals"

Tr. Mosk. vet. akad. (Works of Moscow Veterinary Academy), 1970, 54, pp 120-121 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.57)

Translation: A comparison of the map of the geographical distribution of leptospirosis by oblast rayon with the map of fields and pastures having acid soil (pH 4.0-5.5) showed that with increase in the area of pastures and fields with acid soil the number of unsafe points, and the number of sick and dead animals decreased abruptly, and in regions with more than 75% of area with acid soil, no disease at all was recorded.

1/1

1/2   026   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--RESIDUAL STRESSES IN BUILT UP CRANKSHAFTS -U-

AUTHOR-(03)-NALIVKIN, V.A., CHEPELENKO, V.I., NUYKINA, T.P.

COUNTRY OF INFO--USSR

SOURCE--AVTOMAT. SVARKA, FEB. 1970, (2), 55-49

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PROPULSION
  AND FUELS
TOPIC TAGS--RESIDUAL STRESS, BIBLIOGRAPHY, CHROMIUM STEEL, MANGANESE
  STEEL, ENGINE CRANKSHAFT, WELD FACING, METAL SURFACING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0317   STEP NO--UR/0125/70/000/002/0055/0059

CIRC ACCESSION NO--AP0124076
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0124076
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF THE RESIDUAL
STRESSES IN CRANKSHAFTS BUILT UP BY WELDING IS DISCUSSED. THE RESIDUAL
STRESSES IN THE SURFACING METAL ARE DIRECTLY RELATED TO THE NATURE OF
THE WELDING MATERIAL SELECTED AND THE HEAT TREATMENT APPLIED. IN ORDER
TO CREATE A FAVORABLE STRESS DISTRIBUTION, SPECIAL WELDING MATERIALS ARE
REQUIRED (E.G., CR-MN STEELS), AND THE PROCESS MUST BE COMPLETED BY
NORMALIZATION AND H.F. HARDENING. MECHANIZED BUILDING UP UNDER FLUX IS
NOT SUITABLE FOR CRANKSHAFTS AS IT LEADS TO A SEVERE LOSS IN STRENGTH.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70

1/2   041

TITLE--EVAPORATION OF A HIGHLY CONCENTRATED SODIUM AND POTASSIUM NITRATE
AND CHLORIDE SOLUTION IN AN EXTERNAL BOILING ZONE -U-

AUTHOR--NUZHA, N.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. NEFT. MASHINOSTR. 1970, (2), 16-17

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--STEEL, METAL COATING, POTASSIUM NITRATE, SODIUM NITRATE,
TEFLON, PLASTIC COATING, CHLORIDE, AQUEOUS SOLUTION, SODIUM CHLORIDE,
HEAT TRANSFER RATE/(U)KH18N10T STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0757   STEP NO--UR/0314/70/000/002/0016/0017

CIRC ACCESSION NO--AP0107299
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0107299
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   AN UNCOATED AND VARIOUSLY COATED
TYPE KH18N10T STEEL, VERTICAL TUBE EVAPORATOR WITH A HEAT TRANSFER
SURFACE OF 1.58 M PRIME2 IS DESCRIBED.   EVAPNS. IN POLYFLUOROETHYLENE
RESIN COATED TUBES, SHOWED NO FOULING DEPOSITS.   CONCD. SOLNS. (1420
KG-N PRIME3) CONTG. KNO SUB3 32.8, NANO SUB3 9, AND NACL 16.1PERCENT
WERE FURTHER CONCD. AT 138DEGREES TO D. EQUALS 1800-1820 KG-M PRIME3 AND
CONTENTS KNO SUB3 61.9, NANO SUB3 20.0, AND NACL 5.75PERCENT.   AT SOLN.
D. EQUALS 1800 KG-M PRIME3 THE HEAT TRANSFER COEFF., K EQUALS 950 KCAL M
PRIME2 HR DEGREE AND THE VAPOR CONSUMPTION WAS EQUAL TO 25 KG-M PRIME2
HR.

UNCLASSIFIED

USSR   UDC 576.312.36

NUZHDIN, N. I., Corresponding Member, Academy of Sciences USSR and
PASTUSHENKO-STRELETS, N. A., Institute of Biophysics, Academy of Sciences
USSR, Moscow

"Reasons for the High Radioresistance of Barley Seeds From Plants Grown in
High Mountains (Western Pamirs)"

Abstract: Natural ultraviolet radiation, especially in regions of intense
insolution like the Western Pamirs, clearly has a protective effect against
ionizing radiation. Seeds from two barley varieties were grown under condi-
tions that excluded the ultraviolet part of the spectrum and then exposed to
Cs^{137} gamma rays at various doses. The yield of chromosome aberrations
counted in meristematic cells of root tips in late anaphase and early telophase
served as a criterion of radioresistance. Cytological analysis showed that
the frequency of chromosome aberrations in gamma-irradiated seeds from plants
deprived of ultraviolet radiation throughout the growing period was much

1/2

USSR

NUZHDIN, N. I. and PASTUSHENKO-STRELETS, N. A., Doklady Akademii Nauk SSR, No 4, 1971, pp 954-957

higher than in roots of seeds grown under light conditions normal for the Western Pamirs (control). In the variations without irradiation, the frequency of chromosome aberrations was virtually the same in both the experimental and control seeds of both barley varieties.

2/2

1/2   020   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--CHROMOSOME MUTATIONS INDUCED BY SPACE FLIGHT FACTORS IN BARLEY
SEEDS DURING THE FLIGHT OF THE AUTOMATIC STATIONS ZOND-5 AND ZOND-6
AUTHOR-(05)-NUZHDIN, N.I., DOZORTSEVA, R.L., PASTUSHENKOSTRELETS, N.A.,
SAMOKHVALOVA, N.S., CHUDINOVSKAYA, G.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. ABSHCH. BIOL. 1970, 31(1), 72-83

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIATION INDUCED MUTATION, AGRICULTURE CROP SEED/(U)ZOND 5
CIRCUMLUNAR PROBE, (U)ZOND 6 CIRCUMLUNAR PROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1962   STEP NO--UR/0321/70/031/001/0072/0083

CIRC ACCESSICN NO--AP0123743
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0123743
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. SEEDS OF 2 VARIETIES OF BARLEY
(RADIORESISTANT, AND RADIOSENSITIVE), IRRADIATED WITH 5 OR 10 KR AND
PRIME137 CS GAMMA RAYS, OR NONIRRADIATED, DURING THEIR DORMANT AND
RESTING STATE, WERE PLACED IN THE ZOND-5 AND ZOND-6 SPACESHIPS, WHICH
FLEW AROUND THE MOON. AFTER THE FLIGHT, THEY WERE THOROUGHLY ANALYZED.
THE CYTOL. STUDIES SHOWED SIGNIFICANT DIFFERENCES BETWEEN THE EXPTL. AND
CONTROL SERIES IN THE AMTS. OF ABERRANT CELLS DUE TO CHROMOSOMAL
MUTATIONS CAUSED BY THE SPACE FLIGHT FACTOR (SFF). SFF CAUSED
CHROMOSOMAL MUTATIONS IN THE SEEDS. THE GENETIC EFFECT OF THE COMBINED
INFLUENCE OF SSF AND GAMMA IRRADN. DEPENDED ON THE PHYSIOL. STATE OF THE
IRRADIATED SEEDS, AND ON THE DOSES OF IRRADN. DORMANT SEEDS WITH A HIGH
RADIORESISTANCE, AFTER IRRADN. WITH LOW GAMMA RAYS DOSES, WERE MORE
AFFECTED BY THE COMBINED INFLUENCE OF SFF AND GAMMA IRRADN. SEEDS IN
THE RESTING STATE WITH HIGH RADIOSENSITIVITY SHOWED A SHARP INCREASE OF
THE EFFECT OF SFF. THE ADDITIVE AND SENSITIZING EFFECTS OF GAMMA
IRRADN. AND SFF WERE OBSD. IN THE SEEDS FROM THE SPACE SHIPS.
FACILITY: INST. BIOL. PHYS., MOSCOW, USSR.

UNCLASSIFIED

USSR   UDC 681.32.06 + 621.318.12

NUZHDIN, O.M.

"Use Of The 'Nair' Electronic Computer For Computation Of A Periodic Magnetic
Focusing System Of The Comb-Shaped Type"

Elektron. tekhnika. Nauchno-tekhn. sb. Ferrit. tekhn. (Electronic Technology.
Scientific-Technical Collection. Ferrite Technology), 1970, No 2(24), pp 102-106
(from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A180)

Translation: The paper describes the use of an electronic computer for computation
of a periodic magnetic focusing system of the comb-shaped type. The program worked
out for the "Nair" computer made it possible with specified magnetic parameters for
the system to determine the optimum dimensions of its elements and the characteris-
tics of the hard magnetic material. 2 ref. Summary.

1/1

USSR   UDC: 621.396.96:621.371

CHIZHOV, V. I., NUZHDIN, V. M., YEGOROV, V. V., OVCHINNIKOV, Ya. Yu.

"Energy Characteristics of a Signal Reflected from an Extended Rough Surface"

Tr. Mosk. aviats. in-ta (Works of the Moscow Aviation Institute), 1970,
vyp. 208, pp 48-62 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1G28)

Translation: The authors consider the energy characteristics of a reflected
signal as a function of the statistical properties of the reflecting surface,
the velocity vector of the aircraft, radiation patterns of the transmitting
and receiving antennas, and parameters of the probing signal. The spectrum
of Doppler fluctuations at the receiver output is calculated. The indeter-
minacy function is found for the reflected signal. It is shown that the
energy spectrum of the signal at the receiver output is a convolution of the
indeterminacy function of the probing signal and the transition-spectral
characteristic of the surface. Six illustrations, bibliography of three
titles. N. S.

1/1

USSR

UDC: 621.371.332.2:621.391.883.6

NUZHDIN, Yu. A.

"Calculation of Optimum Ratios of False Operation and Suppression Errors
in Multichannel Radar Receivers"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute),
1972, vyp. 110, pp 26-29 (from RZh-Radiotekhnika, No 8, Aug 72, Abstract
No 8G11)

Translation: [The authors determine] the ratios between errors of false
operation and suppression in each of the channels of a multichannel radar
receiver with respect to the criterion of maximum average effectiveness.
The results are used in calculating optimum adjustment of each of the
channels. A practical example is given. Two illustrations, bibliography
of three titles. N. S.

1/1

- 62 -

UDC 669.295:539.125.5

USSR

CHEBOTAREVA, YE. S. and NUZHDINA, S. G., Institute of High Pressure Physics, Academy of Sciences USSR

"Observation of Omega-Titanium in a Composite Alloy on a Fine-Crystalline Diamond Base"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 205-207

Abstract: A structural analysis of the content of the crystal components of a composite alloy, made on a base of synthetic fine-crystalline diamonds was conducted at a pressure of 40 kbar and temperature of 1200° C for the purpose of determining the existence of omega-titanium when titanium was used as one of the binding components in the alloy. Diffraction neutronography was used to provide data on the varying role of inclusions in the composite alloy. A comparison was made of calculated interplanar distances and integral intensities with the results of neutronogram processing from which it was possible to make a conclusion about the formation of the omega-Ti phase in the aprocess of producing the composite alloy. The authors thank R. A. ALIKHANOV, A. A. SEMERCHAN, and V. P. MODEBOV for advice and V. M. ULANOV for help with the experiment. One figure, one table, eight bibliographic references.

1/1

- 15 -

USSR   UDC 541.65

NUZHDINA, Yu. A., and YEGOROV, Yu. P., Institute of Organic Chemistry Acad. Sc. UkrSSR

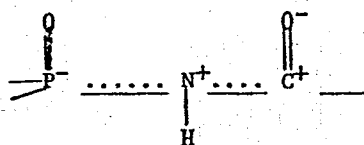"Structure and Spectra of the Phosphorylated Amides and Urethanes"

Abstract: Earlier studies have shown a shift in the IR spectra of the -NHCO-group of phosphorylated amides and urethanes as compared to corresponding alkyl compounds. The P-N valence vibration also appeared at a higher frequency. An assumption was made that this was due to the conjugation of an unshared pair of electrons of the nitrogen atom with the vacant 3d-orbital of the phosphorus atom or by d_π-p_π-conjugation. The frequencies and forms of the normal vibrations of fragments $Cl_2P(O)NHCOC'$ and $Cl_2P(O)NHCOO'$ ($C' = CCl_3$, and $O' = OCH_3$) were calculated as well as the distribution of the potential energy along the actual vibrational coordinates in an attempt to find out whether the shifts in the vibrational frequencies are due to electron shifts leading to a change in the field of a molecule, or to a change of kinematic parameters. It has been shown that the electron density is delocalized within the skeleton of the phosphorylated amides, shifting
1/2

USSR

partially towards the carbonyl oxygen. The following model is proposed for the electronic structure of these molecules:

2/2

Pesticides

USSR

UDC 632.937

NOVOZHILOV, K. V., and SHUMAKOV, YE. M.

"Biological Method of Pest Control and Contemporary Chemistry"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleyev,
Vol 18, No 5, 1973, pp 545-552

Abstract: A review with 66 references discussing the spectrum of entomolo-
gical pest control agents. The early direction of the research in this area,
reaching into preceeding century, was aimed at natural enemies of the pests.
However, the microbiological control method appeared to be effectively
used only in the U.S.A. and USSR. The next research period was aimed at
bacteria, viruses, fungi on one hand, and at chloroorganic compounds with
specific selective activity on the other. The most recent direction in
the research effort is aimed at genetic methods, the so called sterile male
technique, discovery of which the authors attribute to A. S. Serebrovskiy. The
most recent achievement in the fight to control pests is the development of
new lines of insects with complex chromosomes, syntheisis of sex attractants --
the pheromones -- and finally synthesis of sex hormones.

1/1

USSR

UDC: 577.3

NUZHINA, A. M., SEDYKH, N. V., and SAFRONOVA, M. M., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Study of Immunological Reactivity and Immune Specificity of DNAses from Bac. amylozyma and Serr. marcescens"

Moscow, Biofizika, Vol 16, No 1, Jan/Feb 71, pp 142-144

Abstract: A study was made of the dielectric properties and conformation changes in the macromolecules of enzymes isolated from S. marcesens (strain 41) and B. amylozyma (strain 9) and in humoral antibodies elaborated in response to the administration of these nucleases. The reaction of the enzymes with the corresponding antibodies resulted in their dehydration due to rupture of the "biomacromolecule - water" bond and appearance of a "biomacromolecule - biomolecule" (antigen + antibody) bond. It appears that there are complementary groups or regions in the antigen and antibody molecules.

1/1

UNCLASSIFIED   PROCESSING DATE--30OCT70

1/2   022
TITLE--PENETRATION OF DEOXYRIBONUCLEASES INTO INTACT CELLS OF EHRLICH
CARCINOMA AND THEIR INFLUENCE ON NUCLEIC ACID SYNTHESIS -U-
AUTHOR-(03)-NUZHINA, A.M., VINTER, V.G., GAREYSHINA, A.Z.

COUNTRY OF INFO--USSR

SOURCE--VOP. ONKOL, 1970, 16(4), 99-103

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARCINOMA, RNA, DNA, PANCREAS, BACTERIA, RIBONUCLEASE,
BIOSYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/0486   STEP NO--UR/0506/70/016/004/0099/0103

CIRC ACCESSION NO--AP0128055
                            UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0128055
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PANCREATIC OR SERRATIA MARCESCENS
DNASE PENETRATED INTACT EHRLICH CARCINOMA CELLS, APPARENTLY IN 2 STAGES
INVOLVING ADSORPTION ON THE CELL MEMBRANE SURFACE AND DIRECT PERMEATION
INTO THE CYTOPLASM. IN SMALL CONCNS. (10 MUG-ML) EXOGENOUS DNASE
STIMULATED AND AT LARGE CONCNS. (30-50 MUG-ML) SHARPLY INHIBITED THE
SYNTHESIS OF DNA AND RNA.   FACILITY: STATE KAZAN UNIV., KAZAN,
USSR.

UNCLASSIFIED

UDC 533.6.011

USSR

NUZHINA, T. S.

"Optimal Averaging of the Profile in a Supersonic Linearized Gas Stream"

Tr. Kazan. aviats. in-ta (Works of Kazan' Aircraft Institute), 1971, vyp. 130, pp 51-59 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11B183)

Translation: The problem of the symmetric minimum drag profile around which there is a supersonic stream of gas with zero angle of attack is solved. Random factors affecting the shape of the profile, which can be errors in manufacturing it, and so on, are considered. The problem is reduced to finding the minimum drag dispersion of the profile with given mathematical expectation of the drag and also for given maximum thickness of the profile, length of chord and profile area. The solution of the problem is found by the method of optimal averaging for discontinuous stochastic systems. An example calculation is presented.

1/1

USSR   UDC: 669.783.5:538.2

ZAV'YALOV, V. K., RADOVSKIY, I. Z., LEVIN, Ye. S., NVZOROVA, E. G., GEL'D, P. V.,
Sverdlovsk

"Magnetic Properties of Liquid Alloys of Germanium with Iron, Cobalt and
Nickel"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 6, 1973, pp 32-34.

Abstract: This article presents the results of investigation of the magnetic
susceptibility of liquid Fe-Ge, Co-Ge and Ni-Ge alloys. The concentration-
temperature dependence of magnetic susceptibility was studied by the Faraday
method in the 900-1700° C temperature interval. It was found that the Curie-
Weiss law is followed in Fe-Ge melts where $N_{Ge} < 0.7$, in Co-Ge melts where

$N_{Ge} < 0.45$, and is not followed in Ni-Ge melts. The concentration dependences

of effective magnetic moments μ_{eff} for Fe-Ge and Co-Ge alloys differ quali-

tatively. In the first case, the dependence of μ_{eff} on N_{Ge} shows a minimum

near $N_{Ge} = 0.2$, while in the second case μ_{eff} remains independent of concen-

tration approximately up to $N_{Ge} = 0.15$, then increases from 3.0 μ_B to 3.7 μ_B

(at about 30 at. % Ge).
1/1

- 75 -

1/2   020   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--A LACUNAR CONDITION OF THE BRAIN IN AN ATHEROSCLEROTIC PHASE OF
  HYPERTENSIVE DISEASE -U-
AUTHOR-(02)-LITVAK, L.B., NYAGUBELYAYEVA, A.I.

COUNTRY OF INFG--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
  VOL 70, NR 6, PP 801-808
DATE PUBLISHED------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPERTENSICN, ATHEROSCLEROSIS, BRAIN, SENSORY MOTOR AREA

CENTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1015   STEP NO--UR/0246/70/070/006/0801/0808

CIRC ACCESSION NG--AP0126653
                        UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126653
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT. COMPARING THE FEATURES OF CEREBRAL
SYMPTOMATOLOGY AND THE SPECIFIC PATHOMORPHOLOGICAL CHANGES OF THE BRAIN
TISSUE THE AUTHORS DISCUSS THE FEATURES OF A LACUNAR CONDITION OF THE
BRAIN IN AN ATHEROSCLEROTIC PHASE OF HYPERTENSIVE DISEASE. A
COMBINATION OF TYPICAL EXTRAPYRAMIDAL MOTOR DISORDERS, A SPECIFIC GAIT,
PSEUDOBULBAR SYMPTOMS, CHANGES SENSITIVENESS AND GROSS MEMORY IMPAIRMENT
DETERMINE THE SPECIFIC CLINICAL PICUTRE. THE BASIS OF IT IS A
DEVELOPMENT OF MANY SMALL FOCI WITH BRAIN DISTRUCTION: LACUNAE, THE
LOCATION OF WHICH HAS A PREDILECTIVE CHARACTER. THE AUTHORS STRESS THE
PROGRESSIVE DEVELOPMENT, WITHOUT STROKES, WHERE 2 PERIODS CAN BE
ELIMINATED. THIS FORM OF CEREBRAL VASCULAR PATHOLOGY IS FREQUENTLY SEEN
NOT ONLY IN OLD AGE, BUT IN YOUNGER PATIENTS AS WELL.   FACILITY:
KHAR'KOVSKIY NAUCHNO'ISSLED. INSTITUT NEVROLOGII I PSIKHIATRII.

UNCLASSIFIED

USSR

UDC: 519.21

NYAMURA, A. A.

"On Asymptotic Stability of One Class of Extremum Systems"

Tr. AN LitSSR (Works of the Academy of Sciences of the Lithuanian SSR),
1970, B, No 3(62), pp 141-146 (from RZh-Kibernetika, No 7, Jul 71, Ab-
stract No 7V125)

Translation: This paper deals with the free motion of extremum systems
described by the following system of one-dimensional stochastic differen-
tial equations:

$$\frac{dx}{dt} + R(t)\,x(t) = 0 \qquad (1)$$

where $x(t) = (x_1(t), x_2(t), \ldots, x_n(t))^T$ is some random process which is stationary
in a broad sense, $R(t) = r(t)\,r^T(t) = \|R_{kj}(t)\|\,(k, j = 1, 2, \ldots, N)$ is a random matrix
function which is stationary in a broad sense, the matrix $R(t)$ being non-
negatively defined with rank equal to unity at any time $t \in [0, \infty)$. It is
proved that system (1) is asymptotically stable on the rms average if the
constant matrix $R = M\{R(t)\}$ is positively defined. It is also shown that

1/2

NYAMURA, A. A., Tr. AN LitSSR, 1970, B, No 3(62), pp 141-146

system (1) is "almost certainly" asymptotically stable if $r(t)$ is ergodic. Author's abstract.

USSR

NYAMURA, A. A.

of observations, on the assumption that

$$z(t) = \sum_s w(s) g(t-s) + n(t),$$

and that the number s for which estimate $w(s)$ reaches its maximum value be considered the estimate of τ. Conditions are presented under which this estimate will probably be near the value of τ. Also, in continuous time an estimate τ is presented, calculated using the least squares method and the method of stochastic approximation.

USSR

DUSHAUSKENE-DUZH, N.-R. F., MARCHYULENENE, E. -D. P., NYANISHKENE, V. B., SHCHULIYENE, R. I., and POLIKARPOV, G. G.

"The Uptake of Radionuclides by Some Fresh-Water Hydrobionts"

Translation: As a result of investigations conducted under natural con-ditions in 1967-1968 (10 fresh water ponds in the Lithuanian SSR), it was established that the accumulation coefficients (AC) for ^{90}Sr and ^{210}Pb did not differ in fishes and molluscs, while in the case of plants the AC for ^{210}Pb was an order of magnitude less than that for ^{90}Sr. A definite cor-relation was found to prevail between the concentrations of ^{90}Sr and ^{210}Pb. The AC for ^{90}Sr and ^{210}Pb were found to depend on the ash content of the hydrobionts. The highest AC for ^{90}Sr, ^{137}Cs, ^{144}Ce, and ^{106}Ru were observed in the case of the phytoplankton and in the silt. Of the various radio-nuclides, ^{144}Ce had the highest AC in the hydrobionts, and ^{137}Cs in the silt. The AC of ^{90}Sr was relatively low in the hydrobionts and silt. The

1/2

- 57 -

intense accumulation of ^{137}Cs, ^{144}Ce, and ^{106}Ru in the silt from the aquatic environment serves to decrease the uptake of these radionuclides by chirono- mid larva. The chironomid larva assimilate radionucleotides in the follow- ing quantities from a radioactive meal: ^{90}Sr -- 10%, ^{137}Cs -- 9%, ^{144}Ce -- 11%, and ^{106}Ru -- 6%. Year old carps assimilate 10% of the total quantity of ^{144}Ce in a radioactive meal (chironomids), which pass through their gas- trointestinal tract. The uptake of ^{90}Sr, ^{137}Cs, ^{144}Ce, and ^{106}Ru by zebra mussels and chironomid larvae, of ^{90}Sr into the organisms of pond snails, and of ^{144}Ce by the year old carps occurs primarily from the aqueous envir- onment, and in smaller quantities from the food. It was shown that fishes belonging to different trophic levels (carps and predatory fishes) accumulate ^{90}Sr to the same extent. Analogous findings held for ^{210}Pb. The AC for each of these radionuclides does not depend on the type of nutrition of the fish.

2/2

MARCHYULENENE, D. P. and NYANISHKENE, V. B.

"Accumulation and Distribution of ^{90}Sr, ^{137}Cs, ^{144}Ce, ^{106}Ru in Dreissena Polymorpha and in Lymnea Stagnalis"

Translation: It was established that the radionuclides under study are accumulated and distributed unevenly in individual tissues of many species of fresh water mollusks, such as Dreissena polymorpha and in pond snails, such as Lymnea stagnalis. The largest amount of radionuclides is accumulated in the shell, with 97, 77, 92, and 94% of ^{90}Sr, ^{37}Cs, ^{144}Ce, and ^{106}Ru in mollusks, and 90% of ^{90}Sr in pond snails of the total amount of each radionuclides accumulated in the whole body. Such a distribution of radionuclides in mollusks depends on the ability of certain tissues to concentrate the radionuclides and on the weight ratio of each tissue to the total weight of the mollusk.

1/1

USSR   UDC: 577.1:615.7/9

TREGUBENKO, I. P., SUKHACHEVA, Ye. I., BELOVA, M. N., NYAGINA, O. A., MEN'-
SHIKOVA, G. A., SEMENOV, D. I.

"Effect of Ethylenediaminetetracetic, Cyclohexylaminetetraacetic and Diethy-
lenetriaminepentaacetic Acid Sodium Salts on the Behavior of Cadmium-115 in
an Organism"

Translation: The cadmium complex with ethylenediaminetetraacetic acid sodium
salt is partially dissociated under conditions in the organism, whereas
cadmium complexes with cyclohexylaminetetraacetic and diethylenetriamine-
pentaacetic acid sodium salts, which have higher constants of stability,
are almost completely eliminated from the organism of rats within the first
few days. Early application of the complexing agents appreciably reduces
the deposition of cadmium in the tissues, and increases its elimination with

1/2

USSR

TREGUBENKO, I. P., et al., Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk.
fil. AN SSSR, 1970, vyp. 68, pp 65-67

urine. Diethylenetriaminepentaacetic acid sodium salt has the most pro-
nounced effect. Stable complexes of cadmium-115 are eliminated almost
entirely through the kidneys, part of the isotope being selectively retained
in the kidneys (23-48 percent of the residue in the organism), which may be
utilized for irradiation of kidney tumors. From the authors' resume.

2/2

USSR

NYIRI, J., Central Institute of Physics, Budapest and SMORODINSKIY, Ya. A., Joint Institute for Nuclear Research

"Eigenfunctions in the Three-Body Problem"

Moscow, Yadernaya Fizika, Vol 12, No 1, 1970, pp 202-216

Abstract: A method for transforming the eigenfunctions of a system of three particles with the quantum numbers K, j_1, M_1, j_2, M_2 to a system of functions which simultaneously realize also the representation of a permutation group (quantum number ν) is described. If symmetry with respect to the permutations is not required of the eigenfunctions, the solution of the problem becomes completely elementary. In such a case it may be constructed most simply of all by use of the "tree" method. Attempts to construct a system of functions which possess a definite symmetry with respect to the permutations have not been carried through to the end. The present article employs a different approach, namely an indirect one. An attempt is made to find a method of passing from the complete system of functions constructed by the "tree" method to K-harmonics. This solution is reduced to a Fourier transform. For a complete transition to K-polynomials it is also necessary to satisfy the equation for the eigenvalue of operator Ω.
1/1

UNCLASSIFIED   PROCESSING DATE--13NOV70

TITLE--EXPERIMENTAL DETERMINATION OF THE LUMINESCENCE EFFICIENCY OF SOME ZINC SULFIDE PHOSPHORS -U-

AUTHOR-(03)-NYMM, U.KH., PLEKHANOV, V.G., RAMMO, I.KH.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(1) 153-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LUMINESCENCE, PHOSPHORUS COMPOUND, ZINC SULFIDE, CADIUM SULFIDE, COPPER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/1797   STEP NO--UR/0368/70/012/001/0153/0155

CIRC ACCESSION NO--AP0054631
UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0054631
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE LUMINESCENCE EFFICIENCY OF
  PHOSPHORS ZNS-CU, ZNS (60 MOLE PERCENT)-CDS-CU, AND CDS-CU (10 PRIME
  NEGATIVE2 AND 2 TIME 10 PRIME NEGATIVE2PERCENT) WERE DETD. FROM ENERGY
  YIELDS AND LUMINESCENCE SPECTRA.   ZNS-CU WAS IRRADIATED AT 365, ZNS (60
  MOLE PERCENT)-CDS-CU AT 436, AND CDS-CU AT 546 NM.   THE EFFICIENCIES OF
  ZNS-CU AND ZNS (60 MOLE PERCENT)-CDS-CU WITH PREDOMINANTLY LONG WAVE
  LUMINESCENCE WERE VERY HIGH; THOSE OF PHOSPHORS WITH SHORT WAVE
  LUMINESCENCE IN ALL CASES WERE LOWER.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--27NOV70

1/2   011
TITLE--TECTONIC CLAYS FROM LEAD ZINC DEPOSITS OF THE SADON ORE FIELD -U-

AUTHOR-(02)-KOBILEV, G.A., NYRKOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--GEOL. RUD. MESTOROZHD. 1970, 12(1), 105-10

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--LEAD, ZINC, MINERAL DEPOSIT, IRON OXIDE, SULFIDE, MANGANESE,
GEOGRAPHIC LOCATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0183   STEP NO--UR/0306/70/012/001/0105/0110

CIRC ACCESSION NO--AP0129439
UNCLASSIFIED

2/2   011
CIRC ACCESSION NO--AP0129439
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHEM. AND MINERALOGICAL COMPNS. OF
BOTH FINE AND COARSE FRACTIONS OF TECTONIC CLAYS WERE DETD. THE MAIN
PIGMENTS FOUND IN THE CLAYS WERE ANTHRAXOLITE, HYDRATED FE OXIDES,
LEUCOXENE, SULFIDES, AND MN MINERALS.   FACILITY: NOVOCHERKASSK.
POLITEKH. INST. IM. ORDZHONIKIDZE, NOVOCHERKASSK, USSR.

1/2   040   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--REDISTRIBUTION OF COMPONENTS IN SOLIS SOLUTIONS STUDIED BY X RAY
   SPECTRAL MICROANALYSIS AND ELECTRON MICROSCOPY -U-
AUTHOR-(05)-KIYEVSKAYA, N.KH., KOPP, L.P., BRUK, B.I., NYRKOVSKAYA, V.V.,
   KOROLEVA, N.V.
COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(2), 409-13

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRON MICROSCOPY, SOLID SOLUTION, TRACE ANALYSIS, CRYSTAL
   LATTICE, ALUMINUM ALLOY, IRON ALLOY, CUPPER ALLOY, GRAIN BOUNDARY,
   SURFACE ENERGY, X RAY SPECTRUM, MOLYBDENUM CONTAINING ALLOY, TUNGSTEN
   CONTAINING ALLOY, TIN CONTAINING ALLOY, COPPER CONTAINING ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0324   STEP NO--UR/0126/70/029/002/0409/0413

CIRC ACCESSION NO--AP0126081
                           UNCLASSIFIED

UNCLASSIFIED

CIRC ACCESSION NO--AP0126081
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING 6 ALLOYS WERE
INVESTIGATED: FE PLUS 0.75PERCENT CU; FE PLUS 8.25PERCENT MO; FE PLUS
7.63PERCENT W; CU PLUS 1.78PERCENT FE; CU PLUS 11.2PERCENT SN; AND AL
PLUS 2.1PERCENT CU. THE SAMPLES WERE SUBJECTED TO HIGH TEMP. DIFFUSION
ANNELAING, THEN TO SEOCNDARY ANNEALING AND QUENCHING. IN ALLOYS
QUENCHED FROM THE HOMOGENEOUS REGION THE GRAIN BOUNDARIES ARE MARKEDLY
ENRICHED WITH THE SECONDARY COMPONENT AS COMPARED TO THE INTERNAL VOL.
OF THE GRAINS. THE EXTENT OF THIS ENRICHMENT, AS A RULE, INCREASES AS
THE ALLOY IS CLOSER TO THE SOLY. LIMIT. THE CONCNS. OF THE COMPONENTS
AT THE GRAIN BOUNDARIES IN THE ABSENCE OF PPTS. OF THE SECONDARY PHASE
ALMOST ALWYAS WXCEEDS THE LIMITING SOLY. OF THE ELEMENT (WHEN FAR
REMOVED FROM THE SOLY. LIMIT), THIS POINTS TO THE FORMATION OF AT.
GROUPS ALONG THE GRAIN BOUNDARIES. THE NONREPRODUCBILITY OF THE RESULTS
ATTESTS TO THE NONUNIFORM DISTRIBUTION OF THE ELEMENT ALONG THE GRAIN
BOUNDARIES. THE REASON FOR THIS MUST PROBABLY BE TRACED BACK TO THE
DIFFERENCE IN THE MUTUAL ORIENTATION ANGLE OF THE CRYST. LATTICES AT
VARIOUS POINTS OF THE TOUCHING GRAINS. WHEN THIS ANGLE IS 45DEGREES,
THE FREE SURFACE ENERGY IS AT ITS MAX., AND THE POINT CONCN. OF THE
ELEMENT IS THE MOST PROBABLE. ON THE OTHER HAND, AT THOSE POINTS WHERE
THE ANGLE IS CLOSE TO 0 OR TO 90DEGREES, THE FREE SURFACE ENERGY IS AT
ITS MIN. AN ATTEMPT IS MADE TO EXPLAIN THESE ANOMALIES.
FACILITY: SEV.-ZAPAD. ZAOCH. POLITEKH. INST., LENINGRAD, USSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--18SEP70
1/2   014
TITLE--USE OF ATOMIC ABSORPTION SPECTRA FOR DETERMINING EXCESS QUANTITIES
OF SELENIUM AND ZINC IN ZINC SELENIDE -U-
AUTHOR-(03)-RUDNEVSKIY, N.K., DEMARIN, V.T., MYROKOVA, O.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(1), 156-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ATOMIC SPECTRUM, ABSORPTION SPECTRUM, SELENIUM, SELENIUM,
SELENIUM COMPOUND, ZINC, ZINC COMPOUND, VACUUM DISTILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1983/0929   STEP NO--UR/0368/70/012/001/0156/0158

CIRC ACCESSION NO--AP0053853
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0053853
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SE EXCESS IS SEPD. FROM THE MAIN
COMPONENT ZNSE BY VACUUM DISTN. IN A SEALED TUBE. AT 600DEGREES SE
DISTILLS OFF AND IT IS CONDENSED IN THE COLDER PART OF THE TUBE. THE
TUBE IS OPENED, SE IS DISSOLVED IN HNO SUB3, AND THE SOLN. IS EVAPD.
THE SAMPLE IS PLACED IN A CELL WITH AN AR ATM. (3 ATM) AND HEATED TO
1900DEGREES. THE ABSORBANCE AT 207.4 NM IS MEASURED. THE SENSITIVITY
IS 0.01PERCENT SE AND RELATIVE STD. DEVIATION IS 10PERCENT. ZNSE EVAPS.
AT IS GREATER THAN OR EQUAL TO 800DEGREES, THE EXCESS OF ZN FROM THIS
COMPD. CAN BE VAPORIZED AT 760DEGREES IN A CELL WITH AN AR ATM. THE AT.
ABSORPTION AT 307.6 NM IS MEASURED. SENSITIVITY AND RELATIVE STD.
DEVIATION ARE 10-3PERCENT AN AND 15PERCENT. THE DETN. OF ZN AND SE BY
AT. ABSORPTION IS SIMILIAR TO 10 TIMES MORE SENSITIVE THAN THE
SPECTROGRAPHIC DETN., THEIR PRECISION HAS THE SAME ORDER OF MAGNITUDE.

UDC 539.67

USSR

FELTAM, P., and N'YUKHEM, S.

"Internal Friction in Copper and α-Brass in the Process of Plastic Deforma-
tion"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in
Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 68-73

Abstract: Internal friction in copper and α-brass was investigated by the
method of torsional vibrations in the plastic deformation process.
    The amplitude dependence of internal friction, observed at the near
yield state, is explained by the interaction of a cyclical stress with a
creeping deformation component. The amplitude-independent internal friction
at higher plastic deformations is attributed to losses arising because of a
torsional stress contribution to plastic deformation. The zinc content does
not affect the internal friction up to a maximum tensile deformation of 1%.
3 figures, 7 references.

1/1

USSR

NYUKSHA, Yu. P.

"Activity of the Committee on Biological Damage to Materials of the All-Union
Botanical Society"

Leningrad, Mikologiya i Fitopatologiya, No 6, 1972, pp 466-467

Abstract: The Committee on Biological Damage was appointed to facilitate
contacts and exchange of views between Leningrad specialists scattered in
many state agencies and research organizations. Study of the damage done to
materials by microorganisms has been transformed from a purely applied field
based on empirical principles to a broad discipline with its own research
techniques and goals. During 1971 the committee met a number of times to hear
reports of two kinds: (a) studies on the ecological and physiological character-
istics of the mycoflora and (b) development of new methods for assessing the
activity of various fungi. Some of the subjects discussed were the activity
of cellulose-destroying fungi, physiology of some micromycetes, activity of
fungi on paper in relation to original pH, buffer properties of the medium,
etc., effect of a biological film on the coefficients of light transmission
and diffusion, change in physicochemical properties of paper attacked by fungi,
and methods of mathematically analyzing the results of tests of fungicides.
1/1

1/3   016   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--OPTICAL AND MOESSBAUER SPECTRA OF IRON IN TOURMALINES -U-

AUTHOR-(05)-MARFUMIN, A.S., MKRTCHYAN, A.R., NADZHARYAN, G.N., NYUSSIK,
    YA.M., PLATONOV, A.N.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. GEOL. 1970, (2), 146-50

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ABSORPTION BAND SPECTRUM, IRON, ALUMINUM SILICATE MINERAL,
    CRYSTAL, MOSSBAUER SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1541   STEP NO--UR/0011/70/000/002/0146/0150

CIRC ACCESSION NO--AP0125168
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0125168
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO ABSORPTION BANDS OF VARIOUS
INTENSITY IN THE VISIBLE [13,000-15,000 CM PRIME NEGATIVE1) AND IR
(8500-9500 CM PRIME NEGATIVE1) REGIONS WERE OBSD. IN GREEN TOURMALINE
CRYSTALS. THE OPTICAL ABSORPTION SPECTRA WERE INTERPRETED BY ASSUMING
THAT IONS OF FE PRIME2 POSITIVE ARE SITUATED MOSTLY IN MG OCTAHEDRONS
WITH LOCAL SYMMETRY OF APPROX. D SUB4H. MEANINGFUL DIFFERENCES WERE
OBSD. IN POLARIZED SPECTRA OF BLACK TOURMALINES. THE SPECTRA ALONG
OMEGA (ORDINARY RAY) WERE CHARACTERIZED BY A WIDE ABSORPTION BAND AT
SIMILAR TO 12,000 CM PRIME NEGATIVE1 WHEREAS SPECTRA ALONG EPSILON
(EXTRAORDINARY RAY) WERE SIMILAR TO ABSORPTION SPECTRA OF GREEN
TOURMALINES. IN ADDN. A DIFFUSE BAND AT 18,000 CM PRIME NEGATIVE1 WAS
OBSD. IN SPECTRA OF THE BLACK CRYSTALS. THE ABSORPTION BAND AT SIMILAR
TO 12,000 CM PRIME NEGATIVE1 IS RELATED TO THE PRIME5 A SUB1G YIELDS
PRIME5 D BUBG TRANSITION, THE ONLY ALLOWED ONE FOR FE PRIME2 POSITIVE
IN A TRIGONAL FIELD. THIS INDICATED THAT A PART OF FE PRIME2 POSITIVE
IN THE HIGH FE BLACK TOURMALINES ENTERS INTO THE AL,OCTAHEDRONS WITH
LOCAL SYMMETRY OF SIMILAR TO C SUB3V. THE MG,OCTOHEDRONS ARE THE OTHER
POSSIBLE POSITIONS OF FE IN BLACK TOURMALINES AS INDICATED BY THE
SIMILAR CHARACTER OF THE OPTICAL SPECTRA ALONG EPSILON IN BLACK AND
GREEN CRYSTALS. MOESSBAUER SPECTRA OF PRIME57 FE IN TOURMALINES
INDICATED THAT FE PRIME2 POSITIVE OCCUPY IN BLACK TOURMALINES 2
NONEQUIV. OCTAHEDRON POSITIONS DIFFERING NOTICEABLY FROM EACH OTHER IN
PARAMETERS OF MOESSBAUER SPECTRA. BOTH POSITIONS ARE SIMILAR TO THOSE
OF FE PRIME2 POSITIVE IN GREEN TOURMALINES.

UNCLASSIFIED

CIRC ACCESSION NO--AP0125168
ABSTRACT/EXTRACT--COMPARISON OF THE DATA ON OPTICAL AND MOESSBAUER
SPECTRA OF NATURAL TOURMALINES SHOWS THAT MOST OF THE FE IN GREEN
TOURMALINES IN IN A SINGLE OCTAHEDRAL POSITION WITH TETRAGONAL
DISTORTION (MG,OCTAHEDRONS). FE IS PRESENT IN BLACK TOURMALINES IN 2
OCTAHEDRAL POSITIONS WITH TETRAGONAL (MG,OCRAHEDRONS) AND TRIGONAL
DISTORTIONS (AL,OCTAHEDRONS).   THE AMT. OF FE IN AL,OCTAHEDRONS OF
BLACK TOURMALINES IS MUCH HIGHER THAN IN THE GREEN VARIETIES. THIS
EXPLAINS THE DIFFERENCES IN THE OPTICAL ABSORPTION SPECTRA OF
DIFFERENTLY COLORED CRYSTALS.   FACILITY: INST. GEOL. RUD.
MESTGROZH., PETOGR., MINER. GEOKHIM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.373.521.1:621.382.233

BOBROVSKIY, YU. L., BOL'SHAKOVA, N. P., OBCHINNIKOV, K. D., TSUKER, M. S.

"Superhigh Frequency Tunnel Diode Generator with a Wide Mechanical Tuning Band"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 2 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 2), Leningrad, 1970, pp 204-207 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D261)

Translation: The results of an experimental investigation of a superhigh frequency tunnel diode generator with a wide range of mechanical tuning are presented. The applicability of the quasilinear approximation for calculating the output power is demonstrated. There are two illustrations and a two-entry bibliography.

1/1

USSR   UDC 615.355.099

PRIPUTINA, L. S., OBBARIUS, I. D., BOTSMAN, N. YE., GNATYUK, V. N., and
SVETLAYA, G. V., Laboratory for the Investigation of Food Additives, Kiev
Scientific Research Institute of Nutritional Hygiene

"Determination of the Toxicity of Enzymatic Preparations of Microbal Origin
Designed for Use in the Food Industry"

Abstract: The amylolytic preparation Nigrin SR, made from Asp. niger strain
EU-119 and used in the production of juices and nonalcoholic beverages, and
a second enzymatic prepatation, made from Asp. oryzae strain 476-I and used
in brewing of beer, were tested on white rats and ducklings. The prepara-
tions caused a reduction in serum antibodies, an increase in the relative
weight of the liver, a decrease in the DNA phosphorus concentration in the
liver, changes in liver glycogen content, hyperemia of the spleen, hyper-
plasia of lymphatic tissues, and degenerative changes in the liver and other
organs. The disorders are ascribed to the presence of the fungi's metabolic
products and unindentified fluorescent substances in the preparations. It
is concluded that the Nigrin SR preparation may be used after purification
by the method described.

1/1

Polymers and Polymerization
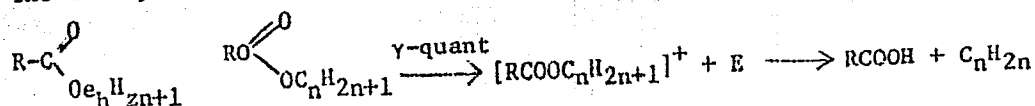
UDC 678.049:66.018.86

USSR

KRYLOVA, S. V., KULIKOVA, A. Ye., OBCHINNIKOV, Yu. V., BERLYANT, S. M.

"Effect of γ-Irradiation on the Stability of Polyvinyl Chloride Plasticizers"

Abstract: A study was made of the effect of γ-radiation on the chemical sta-
bility of phthalic esters, sebacic acid and adipic acid and the effect of the
nature of the acid and alcohol radicals of plasticizers on their behavior
during γ-radiation. γ-Irradiation of plasticizers leads to a sharp increase
in their acidity; therefore, variation of this index was taken as one of the
criteria for evaluating the degree of decomposition of the plasticizers.
The degree of composition depends, significantly on the length of the alcohol
radical. With an increase in length of this radical the acidity of the
plasticizer and ΔN increase (N is the number of carboxyl groups in the
plasticizer).

The decomposition of the esters was described as follows:

$$R-C\overset{O}{\underset{Oe_hH_{zn+1}}{<}} \qquad RO\overset{O}{\underset{OC_nH_{2n+1}}{<}} \xrightarrow{\gamma\text{-quant}} [RCOOC_nH_{2n+1}]^+ + E \longrightarrow RCOOH + C_nH_{2n}$$

1/2

USSR

KRYLOVA, S. V., et al., Plasticheskiye Massy, No 1, 1973, pp 16-18

The results of the effect of the nature of the alkyl radical of esters of phthalic acid on their resistance to γ-radiation and the effect of the -ature of the acid radical on the resistance of polyvinyl chloride plasticizers to γ-radiation are tabulated. After subjecting dioctyl phthalate and dioctyl adipate to γ-radiation with different initial acidity it was found that the greater the initial acidity of these compounds, the less the relative increase in acidity after irradiation. The increase in acidity for dioctyl phthalate after irradiation was always less than for dioctyl adipate. Thus, dioctyl phthalate has self-defensive properties with respect to γ-radiation. The high stability of "acid" plasticizers can be explained by the fact that the high content of free carboxylic acid in the initial esters prevents their decomposition under the effect of γ-radiation. The stabilization of the esters by carboxylic acid probably arises from the absorption or dissipation of some portion of the γ-radiation energy.

2/2

1/2   016   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--OXIDATION OF SOLID PETROLUEM PARAFFIN WAX FROM THE VOLOGRAD
   REFINERY TO FATTY ACIDS -U-
AUTHOR-(03)-GORVACHEVA, G.A., PERCHENKO, A.A., OBEREHKO, A.V.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (1), 34-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--PARAFFIN WAX, OXIDATION, PETROLEUM PRODUCT, PETROLEUM
   REFINERY, CARBOXYLIC ACID, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1527   STEP NO--UR/0318/70/000/001/0034/0037

CIRC ACCESSION NO--AP0118514
                      UNCLASSIFIED

CIRC ACCESSION NO--AP0118514
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE C SUB10 C SUB20 STRAIGHTCHAIN
  ACID CONTENT OF THE OXIDIZED WAX CORRESPONDED TO THE AMT. OF N,PARAFFINS
  IN THE STOCK; A SIMILAR CORRESPONDENCE WAS FOUND FOR THE ISO ACIDS. A
  SOMEWHAT HIGHER CONTENT OF ISO ACIDS WAS DUE TO THE POST OXIDN. PRODUCTS
  OF THE ACIDS. PARAFFIN (AV. MOL. WT. 378), M. 53DEGREES AND CONTG.
  96.5PERCENT N,PARAFFINS, WAS OXIDIZED 18 HR AT 107-30DEGREES WITH
  0.3PERCENT KMNO SUB4 AS AN 8PERCENT SOLN., THE UNSAPOND. PART SEPD.,
  MIXED 2:1 WITH FRESH PARAFFIN WAX, AND OXIDIZED 19.5 HR AT 105-20DEGREES
  WITH 0.085PERCENT MN AS MN-NA SALTS OF C SUB5-C SUB9 ACIDS.   THE
  PROCESS YIELDED 77.2PERCENT MIXED ACIDS, INCLUDING 52.7PERCENT C SUB10-C
  SUB20 ACIDS. THE LATTER ACIDS CONTAINED 90-2PERCENT N,ALKANOIC ACIDS
  AND 9-7.5PERCENT ISO ACIDS.

UNCLASSIFIED

2/2   029
CIRC ACCESSION NO--AP0129659
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   SYSTEMATIC EXPTL. STUDIES WERE
DONE TO CLARIFY CAUSES OF DETONATION FAILURES DURING BLASTING.   TNT AND
GRANULIT AS WERE USED AS EXPLOSIVES.   EXPLOSIVE CHARGES WERE PLACED IN
GLASS TUBES 3.5-4 M LONG AND OF 100-140 MM IN DIAM.   FACTORS CONSIDERED
INCLUDED: STICKING OF THE CHARGE; FORMATION OF VOIDS; CONTAMINATION OF
THE CHARGE WITH WATER, DUST, GRANULES, AND PIECES OF ORE; PRESENCE OF
WATER IN THE BLASTING HOLE; ETC.   DETONATION FAILURES ARE NOT LIKELY TO
BE CAUSED BY VOIDS AND THE PRESENCE OF INERT CONTAMINANTS.   THE PRESENCE
OF H SUB2 O CAN CAUSE FAILURES IN THE CASE OF SOL. OR H SUB2 O REACTIVE
EXPLOSIVES.   UNSTABLE EXPLOSIVES CAN THEN FORM A KIND OF INERT BARRIER.
TROTYL AND TROTYL HEXOGEN DETONATORS ARE EFFECTIVE AND RELIABLE EVEN IN
LOW WTS. (13-200 G); THEY MUST BE USED IN SOMEWHAT LARGER AMTS. FOR
INITIATION OF DETONATION OF H SUB2 O CONTAMINATED EXPLOSIVES.   THE MOST
FREQUENT FAILURES ARE DUE TO QUENCHING OF BURNING OF THE DETONATION
CORD, WHICH HAPPENS WHEN THE CORE OF THE CORD IS MOIST.   IT IS
RECOMMENDED THAT THE MOISTURE INSULATION OF DETONATION CORDS BE
INCREASED BY APPLYING AN EXTRA BITUMINOUS LAYER.   FACILITY:
INST. GEOTEKH. MEKH., KIEV, USSR.

OBERG, L. Ya.

Social Hygiene & Health

JPRS 57875
2 Jan 73

UDC: 572.51-053.31-055

PHYSICAL DEVELOPMENT OF NEONATES IN DIFFERENT SOCIAL GROUPS

Among the many factors determining physical development of neonates, maternal health and living conditions are not the last. For this reason, investigation of the effect of the family's social position and mother's occupation is very significant in evaluating the mean indices of physical development of neonates. The 9th International Congress on Genetics, which defined the relative effect of various factors on birth weight singled out the role of maternal influences on this index (R.G. Svetlov, 1965).*

Many researchers, Soviet ones and those from other socialist countries, note that there is leveling off of differences in mean birth and length indices of neonates in different social groups (R.A. Malysheva, 1955; S.I. Ten, 1963; V.O. Gotlib, 1964; L.M. Navrotskaya, 1968; N.N. Zhelokhovtseva, 1965, 1966; A. Zal'tsler, 1966, and others).

We processed data referable to 1970 on 3,254 women in Perm' who gave birth to term infants (no multiple births: 1,672 boys and 1,582 girls). The data on weight, height, and chest circumference of neonates were analyzed according to social group of the mothers and order of birth, with determination of patterns of differences in physical development on the basis of calculating the reliability criterion and probability of error.

As can be seen in Table 1, half (50.81%) of the mothers were blue collar workers and the other half were white collar workers, students at higher and secondary specialized schools, or unemployed.

The correlation between primipara and multipara in different social groups (Table 2) indicates that the share of each is the same among blue

*I.V. Karsayevskaya, Sotsial'naya i Biologicheskaya Obuslovlennost' Izmeneniy v Fizicheskom Razvitii Cheloveka (Social and Biological Determination of Changes in Human Physical Development), Izd-vo Meditsina, Leningrad, 1970, p

- 12 -

Acc. Nr.: _AR 0103268_

Ref. Code: _UROOOO_

JPRS 49937

Geomagnetic Pulsations of Type Pc5

(Abstract: "Study of Pc5 Geomagnetic Pulsations," by P. Oberts, Leningrad. Uch. Zapiski Leningradskogo Gosudarstvennogo Universiteta, No 346, 1969, pp 107-126)
/From: Moscow, Referativnyy Zhurnal, Geofizika, Svodnyy Tom, No 1, 1970, IA185/

On the basis of data in the literature the author reviews the morphologic properties of Pc5 pulsations and their relationship to other geophysical phenomena. A critical analysis is made of current hypotheses concerning the excitation and propagation of Pc5. Simultaneous records of Pc5 for different stations are compared. The results are used in formulating the requirements on a theory which will explain Pc5 appearing during the morning hours. Bibliography of 21 items.

Reel/Frame
19861426

Devices

USSR

UDC 681.327

DOLGOVESOV, B. S., KOVALEV, A. M., KOTOV, V. N., LUBKOV, A. A., NESTERIKHIN,
YU. YE., OBERTYSHEV, K. F., TOKAREV, A. S., YAKIMOVICH, A. P., Novosibirsk

"Problems of Constructing Devices for Operative Interaction of Man with a Computer"

Abstract: Two types of devices corresponding to the basic requirements for
systems for operative interaction of man with a computer -- a computer operating
in the time sharing mode and peripheral devices numbering from 1 to 1,000 --
have been developed at the Institute of Automation and Electrometry of the
Siberian Department of the USSR Academy of Sciences. One of these devices --
the Ekran -- was discussed previously [B. S. Dolgovesov, et al, Avtometriya,
No 4, 1971; B. S. Dolgovesov, et al., Avtometriya, No 4, 1971; A. M. Kovalev,
et al., Avtometriya, No 4, 1971]. The other -- the Simbol -- is investigated
in the present article. A block diagram of the Simbol alphanumeric system is
presented, and the algorithms for the various operating modes of the system
are discussed. The algorithms of all modes of the system are executed by means
of a microprogram control circuit. An effort was made to achieve the fastest
possible system for which the principal cycle of the microprogrammed control
unit was reduced to a minimum. Where possible the single pulse instruction is
[...]

.R

OLGOVESOV, B. S., et al., Avtometriya, No 2, 1972, pp 35-39

are processed simultaneously; a very high cycle frequency is selected — 2.5 millihertz. The operating logic of the device can be changed. One of the basic parameters of the operative interaction device along with broad functional possibilities is the information capacity. Thus, much attention was given to the high speed of individual units, in particular, the speed of the symbol generator. The programmed segment method was used as the basis for constructing the symbol generator which provides 1,024 symbols with an image regeneration frequency of 50 hertz. An example image photograph from the Simbol screen is shown.

2/2

UNCLASSIFIED   PROCESSING DATE--23OCT70

TITLE--ELECTRICAL CONDUCTIVITY OF COMPLEX ZIEGLER CATALYSTS AND THEIR
ACTIVITY IN OLEFIN REACTIONS -U-

AUTHOR-(04)-OBESHCHALOVA, N.V., SMIRNOVA, G.A., FELDBLYUM, V.SH., TURYAN,
YA.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 270-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ALKENE, COMPLEX COMPOUND, CATALYST
ACTIVITY, ISOMERIZATION, ORGANOALUMINUM COMPOUND, NICKEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1396   STEP NO--UR/0079/70/040/002/0270/0275

CIRC ACCESSION NO--AP0116843
UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--23OCT70

2/2   019
CIRC ACCESSION NO--AP0116843
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE SYSTEM OF ET SUB3 AL SUB2
CL SUB3 WITH NI DI-TERT-BUTYLBENZOATE IN PHCL SOLN. AND CONTG. AN EXCESS
OF AL RELATIVE TO NI THE RELATION IS SYMBOLIC OF CATALYTIC ACTIVITY FOR
ISOMERIZATION OF 2,METHYL,1,PENTENE TO ELEC. COND.   WITH 5 FOLD OR
GREATER EXCESS OF AL OVER NI THE COND. OF THE SYSTEM IS GREATER THAN
FOUND FOR A LARGE EXCESS OF RALCL SUB2, BUT THE CATALYTIC ACTIVITY IS
ABSENT. THE SAME INVERSE EFFECT WAS OBSERVED AFTER THERMAL TREATMENT OF
THE CATALYST. THE SYSTEM OF ET SUB3 AL SUB2 CL SUB3 NICL SUB2 SHOWED A
SYMBATIC RELATION AMONG CONCN. OF NI, COND., AND CATALYTIC ACTIVITY IN
PROPYLENE DIMERIZATION; TREATMENT WITH H RAISED THE COND. AND CATALYTIC
ACTIVITY. COND. MAY BE USED AS THE INDEX OF CATALYTIC ACTIVITY ONLY IN
CASE OF LARGE EXCESS OF THE ALRCL COMPONENT RELATIVE TO NI SALTS. THIS
RULE IS LOST WHEN THE RATIO OF AL TO NI IS LOWERED OR BECAUSE OF HEAT
TREATMENT: THIS IS CAUSED BY THE FACT THAT COND. IS THE RESULT OF
DISSOCN. OF BOTH ACTIVE CATALYST PARTICLES AS WELL AS OTHER COMPLEXES
THAT MAY BE PRESENT.   FACILITY: NAUCH.-ISSLED. INST. MONOMEROV
SIN. KAUCH., YAROSLAVL, USSR.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70

TITLE--OLIGOMERIZATION OF ETHYLENE UNDER THE INFLUENCE OF A
DIISOBUTYLALUMINUM CHLORIDE NICKEL OLEATE CATALYTIC SYSTEM -U-
AUTHOR-(03)-FELDBLYUM, V. SH., LESHCHEVA, A. I., OBESHCHALOVA, N. V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(2), 213-18

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLENE, ALUMINUM CHLORIDE, ORGANO ALUMINUM COMPOUND,
HEPTANE, BENZENE DERIVATIVE, BUTANE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0212   STEP NO--UR/0366/70/006/002/0213/0218

CIRC ACCESSION NO--AP0113151
                              UNCLASSIFIED

USSR

UDC 621.396.6.019.3

CHERNYAYEV, V. N., OBICHKIN, YU. G., and GUSEV, V. P.

"Approximate Calculation of Reliability of the Process of the Production of Radioelectronic Equipment on the Basis of Average Group Intensities of Failure of Its Operations"

Moscow, Nadezhnost' i Kontrol' Kachestva, No 8, 1973, pp 22-27

Abstract: Consideration is given to the possibility of calculating the relia-bility of the process of the production of radioelectronic equipment prior to the start of series production. This process is represented as a system con-sisting of a set of elements which are the production operations, and as the criterion of reliability of the process is selected the probability of the dectection of a flaw in output passing through the adjustment operations and/or undergoing the acceptance tests. On the basis of such representation, it is possible a) to construct a graph of change of the parameter of flow of failures of the production process as a function of time; b) to determine the nature of distribution of the catch-up time between failures of the process of production of the radioelectronic equipment; c) to conduct an approximate calculation of reliability of the production process prior to initiation of the series pro-duction of radioelectronic equipment. 4 tables. 2 references.
1/1

CIRC ACCESSION NO--AP0113151
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION WAS CARRIED OUT
BY OXIDIZING ETHYLENE (I) UNDER ATM. PRESSURE THROUGH A MIXT. OF ISO-BU
SUB2 ALCL IN N-HEPTANE AND NI-OLEATE. IN
CONVERSION OF I WAS SMALLER THAN OR EQUAL TO 89PERCENT AT SIMILAR TO
30DEGREES AND LOWER AT OTHER TEMPS. THE CONVERSION OF I INCREASED WITH
AL-NI RATIO, BUT IT REMAINED APPROX. CONST. AFTER 4:6 RATIO WAS REACHED.
THE PRESENCE OF LARGER THAN 4 VOL. PERCENT O IN I DECREASED THE
CONVERSION. CHANGING THE TEMP., AL-NI RATIO, OXYGEN CONTENT, AND THE
RATE OF I FLOW VARIED THE SELECTIVITY OF THE MAIN PRODUCTS FORMATION
SMALLER THAN OR EQUAL TO 100PERCENT FOR BUTENES (MOSTLY 2,BUTENE) AND
SMALLER THAN OR EQUAL TO 60PERCENT FOR HEXENES (MOSTLY
3,METHYL,2,PENTENE).

USSR

UDC: 621.375.132.3(088.8)(47):621.385.
.032.213.2

SUSLOV, I. A., OBIKHVOSTOV, V. D., Tomsk Institute of Radio Electronics and Elec-
tronic Technology)

"A Cathode Follower"

USSR Author's Certificate No 250217, filed 14 Mar 68, published 9 Jan 70 (from
RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D155 P)

Translation: To compensate for the effect of parasitic capacitance between the
cathode and heater of a tube, an rf choke is connected in one of the conductors of
the heater circuit for the tube in this cathode follower, and the other conductor
is connected to the cathode through a resistor, and to the ground bus through an
inductor and resistor connected in parallel.

1/1

2

UDC: None

USSR

YEROZOLIMSKIY, B. G., BONDARENKO, L. N., MOSTOVOY, Yu. A., OBINYAKOV, B. A., FEDUNIN, V. P., and FRANK, A. I.

"Measurement of Neutron Spin-Electron Impulse Angular Correlation in the Decay of Polarized Neutrons"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol. 13, No. 7, 5 April 1971, pp 356-359

Abstract: This letter offers an experimental method for precise measurement of the angular correlation coefficient in the beta decay of neutrons. To avoid errors due to proton recoil and other factors, the operating part of the neutron beam in the experimental apparatus is separated out by a diaphragm from the electron detector, and the recording of all decay protons corresponding to the recorded electrons is thus guaranteed. A cross-sectional sketch of the apparatus is given. The polarization coefficient of the neutron beam, measured by the Stern-Gerlach method, was 0.77 ± 0.02 at an intensity of $3 \cdot 10^7$ neutrons/sec. The

1/2

- 115 -